



Jeremiah W. (Jay) Nixon, Governor • Mark N. Templeton, Director

## DEPARTMENT OF NATURAL RESOURCES

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February 22, 2010

**SUPERFUND DIVISION**

Mr. Paul Rosasco, P.E.  
Engineering Management Support, Inc.  
7220 West Jefferson Avenue, Suite 406  
Lakewood, CO 80235

RE: Comments on Draft Work Plan for Supplemental Feasibility Study  
West Lake Landfill Operable Unit 1, Bridgeton, Missouri

Dear Mr. Rosasco:

The Missouri Department of Natural Resources has completed its review of the above referenced document prepared by Engineering Management Support Inc. (EMSI), and is transmitting the enclosed final comments. These comments have been compiled by the Department's Hazardous Waste Program, Federal Facilities Section with assistance from other programs within the Department and other State agencies.

Thank you for giving us the opportunity to review and comment on this document. If you have any questions pertaining to these comments please contact me by phone at (573)751-3107, or by written correspondence at P.O. Box 176, Jefferson City, MO 65102.

Sincerely,

HAZARDOUS WASTE PROGRAM

*Shawn Muenks*

Shawn Muenks, P.E.  
Federal Facilities Section

30266608



Superfund

SM:dd

c: Mr. Dan Wall, U.S. Environmental Protection Agency, Region VII

# MISSOURI DEPARTMENT OF NATURAL RESOURCES

## Comments on the West Lake Landfill Operable Unit 1 Work Plan for Supplemental Feasibility Study

### GENERAL COMMENTS:

#### 1.) Groundwater Sampling and Monitoring

Tables 1 through 3 of the work plan list long-term exposure from drinking well water as potential risks to be evaluated for each of the alternatives to be studied (i.e. selected remedy in the OU-1 ROD, on-site disposal, and off-site disposal). However, there is no section in the work plan that discusses the additional groundwater sampling needed in the Remedial Design and long-term groundwater monitoring requirements for each alternative. Please include this component in the Supplemental Feasibility Study (SFS) for each alternative.

#### 2.) Applicable or Relevant and Appropriate Requirements (ARARs) and Remedial Action Objectives (RAOs)

The original Feasibility Study (FS) for OU-1 included ARARs and RAOs that were used to develop the alternatives discussed in the FS and the selected remedy in the current Record of Decision (ROD). The SFS should identify potential ARARs and RAOs as they pertain to the two new alternatives of excavation with on-site and off-site disposal. Please include discussion in the work plan on how these components will be selected and/or updated from the FS.

#### 3.) Disposing of Radioactive Material in Solid Waste Landfill

Be aware that the Solid Waste Regulations (10 CSR 80-3.010(3)(A)(2)) prohibits disposal of radioactive wastes in a permitted Solid Waste Landfill. Please be prepared to address this issue when selecting ARARs for the on-site engineered disposal cell and for residual contamination following excavation of radiological wastes that are below cleanup levels but above background that will remain on-site. The discussion of ARARs should also focus on solid waste regulations as they relate to the CERCLA action at this site.

#### 4.) RCRA Characteristic Waste

Sampling to date indicates that the wastes in the OU-1 portions of the landfill exhibit characteristics of typical municipal solid waste. However, the Department feels that sampling conducted to date may not be indicative of all waste that may be encountered during excavation. The Department requests that confirmatory sampling be conducted prior to or during excavation to verify that no Hazardous Waste is present prior to disposal in an on-site engineered landfill or transported off-site. Procedures to deal with characteristic Hazardous Waste, if encountered, should be included in the SFS.

Hazardous Waste that is encountered and generated will need to be treated and disposed of in a disposal cell designed to a Subtitle C hazardous waste landfill. Applicable or relevant and appropriate requirements for a Subtitle C, hazardous waste landfill can be found in accordance with 10 CSR 25-7.264(2)(N) and 40 CFR 264 Subpart N.

Another issue with encountering Hazardous Waste during excavation is storage and handling. Waste that is determined to be a RCRA characteristic hazardous waste, and has been generated, shall be managed in accordance with 40 CFR 260.10 generator regulations. Staging pile requirements shall be met for any stockpiling, storing or other accumulation of solid remediation waste that is not located within a containment building as stipulated by 40 CFR 264.554. A Professional Engineer certification and approved closure/post closure plan is required for all constructed units including but not limited to landfills, staging piles, etc.

**5.) Excavation vs. Regrading Volumes**

The Department suggests that the volumes of material disturbed for regrading in order to achieve final slopes under the current ROD, be evaluated against calculated excavation volumes and costs necessary for "complete rad removal" above cleanup levels. This should be part of the comparative analysis of alternatives for complete understanding of the nature of excavation necessary into the West Lake Landfill and the risks involved.

**6.) Post-remediation Risk Assessment**

The Department recommends that a post-remediation risk assessment be performed to confirm that residual radiological constituents meet acceptable risk levels. Please provide discussion in the SFS on the feasibility of performing such an assessment for each of the alternatives.

**7.) Radon**

The work plan needs an explanation of how off-site radon migration will be addressed for the new remedial alternatives. Also, appropriate measures should be included in the SFS alternatives to prevent on and off-site exposures.

**8.) Sum of Ratios**

The work plan does not have a discussion of using sum of ratios computation for radiological cleanup levels (see the Multi-Agency Radiation Survey and Site Investigation Manual, MARSSIM). The Department recommends using this approach. Please include a discussion on applicability of this method during cleanup activities.

**9.) Air Monitoring**

Tables 1 through 3 of the work plan list long-term exposure from airborne radon and particulates to future off-site property users as potential risks to be evaluated for each of the alternatives to be studied (i.e. selected remedy in the OU-1 ROD, on-site disposal, and off-site disposal). Please elaborate in the work plan on how this pathway will be evaluated and monitored in the SFS.

**SPECIFIC COMMENTS:**

Comments pertaining to Solid Waste Regulations:

- 10.)** Section 2.8.2.2, Page 17, Regulation 10 CSR 80-3.010(17)(C)(4)(B) requires a drainage layer between the vegetative soil and synthetic liner of the cap.

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- 11.) Section 2.8.2.2, Page 18, Regulation 10 CSR 80-3.010(17)(C)(4)(B) requires one foot of compacted liner( 10-5 cm/sec). The work plan proposes a more protective layer which is acceptable.
- 12.) Section 2.8.2.3, Page 19, This section cites Regulation 10 CSR 80-3.010(10 and 11). We believe the citation should be 10 CSR 80-3.010(9 and 10).
- 13.) Section 2.8.2.3, Page 19, Synthetic Liner cites Regulation 10 CSR 80-3.010(10)(B)(1)(G). We believe the citation should be 10 CSR 80-3.010(10)(B)(1).
- 14.) The work plan contemplates onsite storage of exhumed waste and overburden but does not discuss what environmental protective measures would occur should storage be required. Stockpiling of exhumed waste has been prohibited in the past. Anytime you disturb, exhume, dig or otherwise expose or remove trash from a landfill it is to be hauled to a permitted facility.
- 15.) Construction of an on-site engineered disposal cell, such as that proposed in the work plan would typically require issuance of a solid waste permit prior to construction. Please explain in the SFS the relevance of this requirement as it pertains to the CERCLA action.

**SECTION SPECIFIC COMMENTS:**

- 16.) **Section 2.1 Identification of Soil for Removal Evaluation, page 3** – The cleanup level for total uranium is proposed as 50 pCi/g (above background). The Department would like clarification on how this value was calculated.
- 17.) **Section 2.1 Identification of Soil for Removal Evaluation, page 3** – The third sentence of the second paragraph of this section states, “In order to account for the variability in the background results, the representative background values used in the RI are the mean values of the four results plus two standard deviations.” The RI includes values termed as background values. These are the arithmetic mean of the four results. The Department recommends collecting a statistically powerful number of samples during any remedial design activity to further define background levels. To complete this SFS, the Department realizes that the differences in actual background and those that were calculated during the RI or in the work plan will make very little difference in the amount of estimated material to be excavated.
- 18.) **Section 2.1 Identification of Soil for Removal Evaluation, page 4** – The first paragraph of this page attempts to explain how the final background values were calculated using lowest measured values. The Department is not clear on the methodology and would like clarification in the work plan on this procedure.
- 19.) **Section 2.1 Identification of Soil for Removal Evaluation, page 4** – The sentence in the middle of the page states, “The resultant cleanup values to be used to identify the site soils that will be the subject of the evaluation of “complete rad removal” will be the sum of

the representative background concentrations and the appropriate remediation concentrations listed in the ROD:" Please list the remediation concentrations listed in the ROD that this statement refers to.

- 20.) **Section 2.1 Identification of Soil for Removal Evaluation** – This section does not discuss non-radiological contamination. Please explain how co-located non-radiological contamination will be addressed in the remedy, given risk from radionuclides and non-radionuclides is additive (see the EPA memorandum *Establishment of Cleanup Levels for CERCLA sites with Radioactive Contamination* for EPA's policy on additivity of risk).
- 21.) **Section 2.2 Pre-Excavation Waste Characterization/Surveying/Sampling Requirements, page 6** – The first list of bulleted items gives the preliminary data quality objectives that may need to be addressed by the design phase investigations for the "complete rad removal" alternatives. The Department suggests adding the following bullets:
- Depth to groundwater in relation to radiological waste to determine need for groundwater control during excavation; and
  - Possible Hazardous Waste characterization;
- 22.) **Section 2.2 Pre-Excavation Waste Characterization/Surveying/Sampling Requirements, page 6** – The second list of bulleted items gives the types of investigations or analyses needed to address data quality objectives. The Department suggests adding the following bullet:
- Borings to determine depths to groundwater beneath radiologically contaminated areas;
  - Testing and disposal of investigation derived waste from soil borings; and
  - Proper backfilling of borings.
- 23.) **Section 2.4 Excavation Plan, page 9** – The second sentence of this section states, "The excavation plan should be similar for both off-site and on-site disposal alternatives." The Department disagrees with this statement due to the fact that additional excavation will be required if the proposed on-site disposal cell is located in Area 2 to reach "in-situ soil conditions" as stated in Section 2.8.1.1. Please revise this section to address differences in excavation plans for the various alternatives.
- 24.) **Section 2.4.1 Excavation Phasing and Staging, page 9** – The last sentence of this section states, "A conceptual strategy will be developed in the Supplemental FS to transition the waste materials containing radionuclides above the cleanup levels from off-road haul trucks to on-road transfer vehicles for the off-site commercial disposal alternative." Suggest including action of transferring from off-road haul trucks to railroad gondolas as well. The Department recommends looking at the option of extending a rail spur to the site and use of disposable liners in the gondolas.
- 25.) **Section 2.5 Excavation Verification Sampling, page 11-12** – This section discusses using an on-site laboratory to analyze post-excavation samples for radiological cleanup levels. The Department would like to emphasize the need for appropriate equipment to

detect radiological constituents (specifically thorium-230) at the levels needed for cleanup verification. Please take care in choosing the appropriate laboratory equipment to meet these detection limits.

- 26.) **Section 2.8.1.1 Potential Sites for New On-Site Engineered Disposal Cell, page 15** – The three citing locations are described in this section. Please include a map of these specific locations in the SFS overlain by the historic geomorphic floodplain.
- 27.) **Section 2.8.1.3 Floodplain Evaluation, page 17** – The first sentence of this section states, “As stated in the USEPA January 11, 2010 Statement of Work, if feasible, the on-site engineered disposal cell should be located outside of the Missouri River floodplain.” This statement is inaccurate in that the cell should be located outside the *historical geomorphic floodplain*. Please amend to reflect this as it could result in different areal extents.
- 28.) **Section 2.8.2.2 Cover System – On-site Engineered Disposal Cell, page 17** – Please revise the first sentence to state, “In accordance with the MDNR Solid Waste Management Program (SWMP) regulation 10 CSR 80-3.010 (17)(C)(4)(B) and *UMTRCA*, the envisioned final cover for the on-site engineered disposal cell would consist of the following layers (from top to bottom):”
- 29.) **Section 2.12 Health and Safety Requirements, page 24** – This section talks about worker safety. Suggest adding more detail on promoting safety for on-site personnel that will not be directly involved in the “complete rad removal” activities (e.g. training for transfer station workers, access restrictions, and possibly PPE/monitoring equipment for these individuals).
- 30.) **Section 3.1 Detailed Evaluation of “Complete Rad Removal” Alternatives, page 31** – The Department acknowledges that the Statement of Work calls for the alternatives to be evaluated against threshold and primary balancing criteria but not modifying criteria (i.e. State and community acceptance). The Department considers these important criteria. Please explain in the work plan the reasoning behind these being excluded.
- 31.) **Tables** – The tables list potential risks to be evaluated for the current selected remedy and new alternatives. For “Radiological & Toxic Material Unearthed During Capping” risk of exposure from direct radiation, inhalation, and inadvertent ingestion are listed. Suggest adding punctures to PPE and biological hazards from municipal waste as other potential risks.